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NEW RACES OF THE GENERA *SIALIA* AND *CARPODACUS* FROM MEXICO.

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Thanks to the industry of Chester C. Lamb, new forms continue to appear in the collections from Mexico. Two of these are described in this paper.

For permission to examine the type of *Sialia mexicana bairdi*, Ridgway, and for the loan of a series of *Carpodacus* from Jalisco, my thanks are gratefully offered to Dr. Alexander Wetmore and Dr. Herbert Friedmann of the United States National Museum, Smithsonian Institution.

Sialia mexicana amabile, subsp. nov.

CHARMING BLUEBIRD.

Type.—Male adult in full breeding condition, nesting; number 20491, collection of Robert T. Moore; Nievero, 4 miles west of Ciudad, Durango, Mexico; March 27, 1937; altitude about 8,000 feet; collected by Chester C. Lamb.

Subspecific characters.—Nearest to *Sialia mexicana bairdi* Ridgway, but dorsal region slightly darker, Hay's Brown;[1] the brown coloration much more extensive on the upper parts; brown of the under parts much paler (Mikado Brown, compared with Walnut Brown) and more extensive. The upper parts of the females are darker and the top of the head and neck bluer.

Range.—Breeding in the lower part of the Boreal Zone[2] on Mt. Mohinora

[1] Names of colors in this paper, when capitalized, are taken from Ridgway's "Color Standards and Color Nomenclature," 1912.

[2] For an area of great altitudinal diversity such as northwestern Mexico, I deem it desirable to follow the faunistic school of Merriam, as modified and interpreted by Grinnell (Univ. of Calif. Pub. Zool., Vol. XII, 1914, pp. 62–64). In a previous paper (Proc. Biol. Soc. Wash.; Vol. 50, July 23, 1937, p. 96) I referred to the zone on the top of Mt. Mohinora as the "Temperate Zone," following Chapman's terminology, employed in his discussion of the birds of the Orizaba region. Hereafter I shall use the term "Boreal Zone," whose lower limits are indicated by firs and other related trees as well as by its bird life. An error in this paper (loc. cit.) was the use of the word "northeastern" for "northwestern" in three places under the paragraphs marked "Type," "Range" and "Remarks," on pages 101 and 102.

from 10,500 feet to the top of the mountain at approximately 11,215 feet and also in the Transition Zone from Laguna Juanota, 55 miles west of Parrál, to Los Frailes, Chihuahua, Arroyo del Buey, northcentral Durango, and Nievero, southwestern Durango. Its winter range is not known.

Although Lawrence (Memoirs of Boston Soc. of Nat. Hist., Vol. 2, part 3, No. 2, 1874, p. 267) records a specimen or specimens taken by Grayson at Mazatlan, four years of collecting by Chester C. Lamb and the author have not secured a single individual anywhere in Sinaloa at any time of the year.

Specimens examined.—Bairdi: California: Thermal 2 ♂, Bard 1 ♂, near San Antonio Canyon 2 ♂ 1 ♀. Arizona: Cactus Pass 1 ♂ (Type), Prescott 1 ♂ 1 ♀, Flagstaff 2 ♂ 1 ♀, Graham Mts. 4 ♂, Parker 1 ♂, Tunitcha Mts. 1 ♂, Santa Catalina Mts. 1 ♂, Williams 2 ♂, San Francisco Mt. 1 ♂, Pinery Canyon 1 ♂, Rosemont 1 ♀, Grand Canyon 1 ♂, Ft. Lowell 14 ♂ 2 ♀, Huachuca Mts. 2 ♂ 1 ♀, Roosevelt 2 ♀, Chiricahua Mts. 3 ♂; also 8 ♂ from Arizona (breeding period birds in Am. Mus. Nat. Hist.). New Mexico: Reserve 1 ♂, Gallina Mts. 4 ♂, Capitan Mts. 1 ♂ 2 ♀, Datil Mts. 2 ♂, San Luis Mts. 2 ♂, Hopewell 2 ♂ 1 ♀, Copperton 2 ♂ 1 juv., Manzana Mts. 1 ♂, Horse Lake 2 ♂, Bear Springs 4 ♂, Arroyo Seco 1 ♂, Stinking Spring Lakes 1 ♂, El Vado 1 ♂, Ft. Wingate 1 ♂, Hondo Canyon 1 ♂ 1 ♀, Zuna Mts. 1, Burro Mts. 1, San Mateo Mts. 1, La Jara Lakes 2, Ribera 1 ♂, Guyo Canyon 1 ♂, Garfield 1 ♂, Tierra Amarillo 1 ♂. Texas: Davis Mts. 1 ♂ 2 juv., Ft. Davis 1 ♂. Sonora: Nogales 1 ♂. Migrants in Sonora: Alamos 2 ♂, 11 (?). Chihuahua: Colonia Pacheco 3 ♂ 2 juv. ♂, 2 juv. ♀. Intergrades between *bairdi* and *amabile:* Chihuahua: Pinos Altos 20, Bravo 2, Chihuahua 3, Colonia Garcia 5 ♂ 3 ♀, Colonia Pacheco 1 ♂ 1 ♀. *Amabile:* Chihuahua: Laguna Juanota 5 ♂ 3 juv. ♂ 3 ♀, Mt. Mohinora 4 ♂ 5 ♀, near Guadelupe y Calvo 3 ♂, Los Frailes 2 ♂, 4 ♀. Durango: Muertocito 2 ♀, Ojito 1 ♂, Nievero 1 ♂ (Type) 1 ♀, El Salto 6 ♂ 3 ♀. Zacatecas: "Talparaiso Mts." 1 ♂. *Australis:* Vera Cruz: Mt. Orizaba 2 ♂ 1 ♀. Mexico: Popocatapetl 1 ♂ 1 ♀. Morelos: Huitzilac 1 ♀. Michoacan: Patamban 3 ♂.

Remarks.—As early as the publication of the Birds of North and Middle America, Ridgway called attention to the differences between the birds of northwestern Mexico and those of the United States, but lack of a sufficient series probably made him hesitate to describe the new form. W. deWitt Miller (Birds from Northwestern Durango, Bull. Am. Mus. Nat. Hist., Vol. XXII, Art X, p. 183) emphasized the differences and called attention to the fact that they "exemplify the extreme chestnut-backed type of coloration." This extreme extension of the brown both above and below occurs in the center of the range of the species (Chihuahua and Durango), for both *bairdi* to the north and *australis* to the south have this brown coloration more restricted. This is particularly true of the upper parts of *australis*, which in the state of Morelos show hardly any brown above.

The geographical distribution of the *Sialia sialis* and *Sialia mexicana* groups in northwestern Mexico seems quite extraordinary. South of the Sonora-Chihuahua cross section of the range *sialias* is confined to the western

slopes of the Sierra Madres in Sinaloa and *mexicana* to the eastern slopes in Durango. In the United States the distribution is exactly the opposite, *sialis* being found in the *east* and *mexicana* in the *west!* We have a very large series of both species, *S. sialis fulva* and *S. mexicana amabile,* covering the Sierra Madres from central Chihuahua to southern Sinaloa and Durango. Both species are confined to the high mountains. South of Sonora and Chihuahua *fulva* appears only on the western slopes ascending to at least 6,000 feet in southern Sinaloa, whereas *amabile* occurs only on the eastern slopes from an altitude of 5,000 feet to the top of Mt. Mohinora at over 11,000 feet. Neither species appears to cross the highest backbone of this range, and yet there seems to be no insuperable barrier, except the marked meteorological differences in the south, to prevent the movements of high mountain species from one slope to the other. That the bird of Mt. Mohinora, a heavy rainfall area in the center of the range, should have the dry eastern slope species, is not the anomaly it appears to be, for the same is true in other high mountain families, in which the species range in the Transition and Boreal Zones, such as the woodpeckers (Imperial), parrots (Thick-Billed) and Solitaires (calophonus).

To the north in west central Chihuahua and Sonora the situation seems quite different. Frazar took two specimens of *S. mexicana bairdi* and one specimen of *S. sialis fulva* from the *same* place, Bravo, Chihuahua. It would seem that the distributional lines of these two species cross each other like an "X," the point of the crossing being approximately in west central Chihuahua. The range of *S. sialis* begins in northeastern United States and proceeds south and southwesterly to Chihuahua, finally crossing the breeding range of *bairdi* and appears at Churo on the Barranca del Cobre in the center of the mountain chain, where I found it breeding in 1934, and where *bairdi* was absent. *S. sialis fulva's* range then proceeds southwest to the western slopes of the Sierra Madres and continues on this slope to southern Sinaloa (Rancho Batel). The range of the *Sialia mexicana* group begins in northwestern United States and proceeds southeasterly through Arizona and New Mexico, thence to the eastern slopes of the Sierras through Durango and Michoacan to Morelos. So far it has not occurred west of the Sierra Madres, except for one questionable record in Sinaloa and certain migrants at Alamos in southern Sonora. We have not taken a single specimen in Sinaloa in our intensive collecting of the past five years! The questionable record is Lawrence's, who quotes Grayson as taking it at "Mazatlan" on the coast (Mem. Bos. Soc. Nat. Hist., Vol. 2, Part 3, No. 2, 1874, p. 267). If this bird really came from Mazatlan, which I doubt, it was certainly a migrant. It should be emphasized that only Frazar has found the two species at the same locality (Bravo, July 27). Nowhere have we secured them at the same place in Sinaloa or Durango. The distribution of the two species in southern Mexico still further complicates the picture, but that is a problem which can be discussed intelligently only when large series have been collected. I have found this same kind of distribution of congeneric species in northwestern Mexico in other genera, which will be discussed in a later report.

Carpodacus mexicanus coccineus, subsp. nov.

SCARLET-BREASTED HOUSE FINCH.

Type.—Male adult, in worn nuptial plumage, no. 31826, collection U. S. National Mus.; "Mts. of Colima," Colima, Mexico; June, 1863, collected by John Xantus. Orig. No. 1003. On the back of the original tag is written "5½.3 Iris brown." Probably taken at 6000 feet altitude, on the Volcan de Nieve.

Subspecific characters.—Resembling in nuptial plumage most closely *Carpodacus m. potosinus,* but differing in having the red of the worn nuptial plumage Scarlet, as compared with Nopal Red; ground color of upper parts paler Drab as compared with Benzo Brown, suffused with Scarlet instead of Scarlet Brown; ground color of posterior under parts whiter; size about the same.

In winter plumage of early fall, adult males slightly paler on upper parts, streaking wider on posterior under parts. The female series is not truly comparable, but in worn nuptial plumage, they seem to have the upper parts paler, more Drab as compared with Fuscous, and the ground color of the under parts whiter.

Range.—Mountains of Colima, western Jalisco and Nayarit north to Tepic and Guadalajara, east through Jalisco to at least La Barca, possibly to Patzcuaro, Michoacan.

The northern Jalisco (Bolaños and Colotlan) birds are *intergrades* with *centralis,* closer to *coccineus.*

Specimens examined.—Mexico: Colima: Mountains of Colima 1 ♂, (Type). Jalisco: Tonila 1 ♂ 1 ♀, Talpa 1 ♂, Mascota 1 ♂, Zocoalco 1 ♂, Guadalajara 2 ♀, Ocotlan 2 ♂, Zapotlan 4 ♂ 1 ♀, La Barca 1 ♂. Nayarit: near Tepic 5 Ad. ♂ 4 Im. ♂ 2 Ad. ♀ 2 Im ♀. Intergrades with *centralis:* Michoacan: Patzcuaro 1 ♂. Jalisco: Bolaños 1 ♂ 1 ♀, Colotlan 1 ♂.

Remarks.—This bird is the most brilliant scarlet race in male nuptial plumage of any of the House Finches. Were it not for the fact that every one of the fifteen adult males in the worn nuptial plumage from April to July is uniformly Scarlet, one might conclude they represent merely the "orange type" of coloration, observable in some of the island forms. Comparison with all the aberrant color individuals of all races proves the tone is very different, much less orange and more brilliant. As the specimens come from four states of Mexico and ten different localities, there can be little doubt that this is the standard coloration of this race. Even the immature males have it and their upper parts are heavily suffused with it. This race has been overlooked merely because of failure to assemble sufficient material and the lack of the fresh specimens, which I now have.

With the birds to the south in Guerrero, *coccineus* need not be compared, as it is exceedingly different, in particular much more expansively red on the under parts. From the geographically closest bird to the east, namely *centralis* of Guanajuato, it is separated by its smaller size and much less extensively red under parts and brighter coloration. It is closest to the geographically more distant bird to the northeast, *potosinus* of San Luis Potosí, but differs as described above. Differing markedly from the tiny

rhodopnus of the coastal plains of Sinaloa, it is not only much larger, but of a totally different coloration both in nuptial and winter plumage and sharply streaked below, where *rhodopnus* has practically none.

Four males from Zapotlan and Zocoalco, in worn nuptial plumage (March 18–April 18) kindly loaned to me by Mr. Kinnear of the British Museum, confirm the characters in every particular.

Thanks to Mr. H. G. Deignan of the United States National Museum, I can quote from a letter of John Xantus, dated Colima June 19, 1863, which seems to give information concerning the Type specimen. He wrote: "In my nesting I went up also to the Volcan de Nieve about 8000 (feet) high, and collected there also many nests in the gulches . . . on the volcano about 6000 feet up I got specimens of the *Carpodacus frontalis*, Pipilo fuscus (?) . . ." It was undoubtedly on this excursion that he collected the Type.